## CLAIMS

1. A detection device comprising a parabolic mirror (1) and several radiation detectors (2-5) placed in a focal plane of said mirror, said focal plane being substantially perpendicular to an axis of the mirror (Z'-Z) and containing a focus (O) of the mirror, the detectors being positioned with respective offsets (d2-d5) along a determined common direction (Y'-Y) parallel to the focal plane of the mirror, the detection device furthermore comprising a selection system (100) connected to each of the detectors (2-5) and devised so as to successively select just one of the detectors and to transmit a reception signal (S2-S5) originating from the selected detector,
the respective offsets of the detectors (d2-d5) in the focal plane of the mirror (1) being chosen so that a reception gain diagram of said device exhibits, between two successive gain maxima in said diagram and corresponding respectively to one of the detectors, a gain minimum of less than 3.0 dB below each of said gain maxima.

2. The device as claimed in claim 1, wherein the respective offsets of the detectors (d2-d5) in the focal plane of the mirror (1) are chosen so that the gain minimum, situated between two successive gain maxima in said diagram and corresponding respectively to one of the detectors, is less than 1.5 dB below each of said gain maxima.

3. The device as claimed in claim 1 or 2, comprising four or five detectors (2-6).

4. The device as claimed in any one of claims 1 to 3, wherein the detectors (2-6) are disposed in an aligned manner in the focal plane of the mirror (1).

5. The device as claimed in any one of claims 1 to 4, wherein the selection system (100) is adapted for selecting the detectors (2-6) in a cyclic manner.

6. The device as claimed in claim 5, wherein the selection system (100) is adapted furthermore for selecting the detectors in an increasing or decreasing order of the respective offsets (d2-d6) of the detectors (2-6).

7. The device as claimed in any one of the preceding claims, adapted to operate for radar, each detector (2-6) being adapted to operate for emission or reception of radiation, and the selection system (100) being devised so as to furthermore transmit an emission signal to the selected detector.

8. The device as claimed in claim 7, adapted to operate for synthetized aperture radar.

9. The device as claimed in claim 7 or 8, wherein the selection system (100) comprises several branches (V1, V2) each connected to an input (110) and to an output (111) of the selection system, each detector (2-6) being connected to one of the branches, wherein each branch comprises selectors (101-107) disposed at nodes of said branch, each selector being devised so as to reproduce an emission signal intended for one of the detectors (2-6) on an output of said selector, selected as a function of an emission selection signal transmitted on a control input of said selector, then so as to reproduce a reception signal originating from said detector (2-6) and transmitted on an input of said selector, selected as a function of a reception selection signal transmitted on the control input of said selector.

10. The use of a detection device as claimed in any

one of the preceding claims on board a machine (10) for overflying a geographical zone wherein the detection is effected.

11. The use as claimed in claim 10, wherein the detection device is oriented so that the direction (Y'-Y) of offset of the detectors in the focal plane of the parabolic mirror is substantially perpendicular to a direction (X'-X) of displacement of the machine.